In the Era of Big Data, Is the Ethical Creation of Authentic Artificially Intelligent Video Generation possible?

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Synopsis:

Set in 2024, around 8 years after the onset of the contemporary Artificial Intelligence surge, this essay delves into the dynamics shaping present-day Artificial Intelligence. Big data shapes the nature of Artificial Intelligence today and that limits its authenticity. We demystify the challenges of defining and recognising true Artificial Intelligence, allowing for a detailed exploration of the interplay between Artificial Intelligence, society and perception. The essay acknowledges the current limitations of Artificial Intelligent Video Generators and the ethical challenges they pose. Acknowledging the existing limitations of Artificial Intelligent Video Generators and the ethical dilemmas they present, this essay ultimately proposes that Artificial Intelligence functions as an imperceptible layer atop the digital framework. According to this perspective, as long as Artificial Intelligence remains unknown, it is deemed authentic. It could also be speculated that we may not understand authenticity yet; it may be Artificial Intelligence that opens our eyes to the topic. On the other hand, we may be left in a position when intelligence appears in these machines, where we will not have the systems to treat the machine as 'intelligent'. Finally, this essay speculates about the concept of original thought and ponders about the potential future where society will have to reconsider itself as 'human', and what it means to 'think'.

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1 Intro

AI (Artificial Intelligence / Intelligent) has been on an unprecedented journey, one that has led us into a world where machines can not only process and analyse data but also generate human-like content, pushing the boundaries of digital authenticity. But the current wave of AI has raised questions about authorship and ownership due to their big data scraping methodology. In the era of big data, is the ethical creation of authentic AIVG (AI Video Generation / Generator) possible? In order to embark on a deeper exploration of this question, it is essential to understand the current landscape of AIVG, the implications of big data, and the significance of authenticity in this context. AIVG is no longer science fiction; it has become a practical application of machine learning. Today AIVG produces hallucinogenic and often surprisingly realistic videos for it to then fail at the simplest scene.[1] It is obviously very sophisticated and can already complete quite a few tasks, but it is not at a point in which it can be used for authentic AIVG.[2] As AIVG content becomes more pervasive, ensuring that it aligns with human values, principles, and ethics becomes crucial. I believe AI will become authentic with a social and cultural change, rather than a mathematical solution. Using the literary theory, death of the author, a work is authentic if it exists, it does not matter its origin or creator. AI may be the thing that opens our eyes to the true understanding of the authenticity.[3]

This essay will adopt a technical perspective in addressing this question, primarily because AI technologies are often misunderstood. By delving into the technical aspects, this essay aims to demystify the complexities surrounding current AI technologies and provide a clearer understanding of their intricacies. This approach will not only shed light on the underlying mechanisms but also contribute to bridging the gap in comprehension, fostering a more informed and nuanced discussion on the subject. Understanding how AI currently works is essential for discussing the authenticity of AIVG. Without this understanding, discussions about AI might remain speculative, resembling the realm of science fiction. Also, a technical approach allows us to question the fundamentals alongside the ability to look to the future and how we may solve upcoming problems. We will build up from the fundamentals of data to the complexity of GPTs (Generative Pre-Trained Transformers) to end with a holistic understanding of authenticity in AIVG.

There are going to be images throughout this essay as textural guides. They are not to be analysed but to help the reader situate the technical topics we will be covering.

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[1] Lafta Al-Khazraji, Ayad Abbas, and Abeer Jamil. “A Systematic Review of Deep Dream”. In: *Iraqi Journal of Computer, Communication, Control and System Engineering* 23 (June 2023), pp. 192–209. (Visited on Dec. 29, 2023), p. 200.

[2] Photoshop has integrated a ’content aware fill’ tool that implements AI image in painting and out painting (extrapolating the edges from a mask or image). This is a complex AI tool that is being used today by artists to save time and money. The only implementation of AIVG tools into Hollywood grade artists workflow is that of denoising algorithms, frame interpolation as well as style-gan filtering.

[3] Neil Leach. “Do Robots Dream of Digital Sleep?” PhD thesis. FIU/Tongji/EGS, 2019. (Visited on Dec. 19, 2023), p. 305.

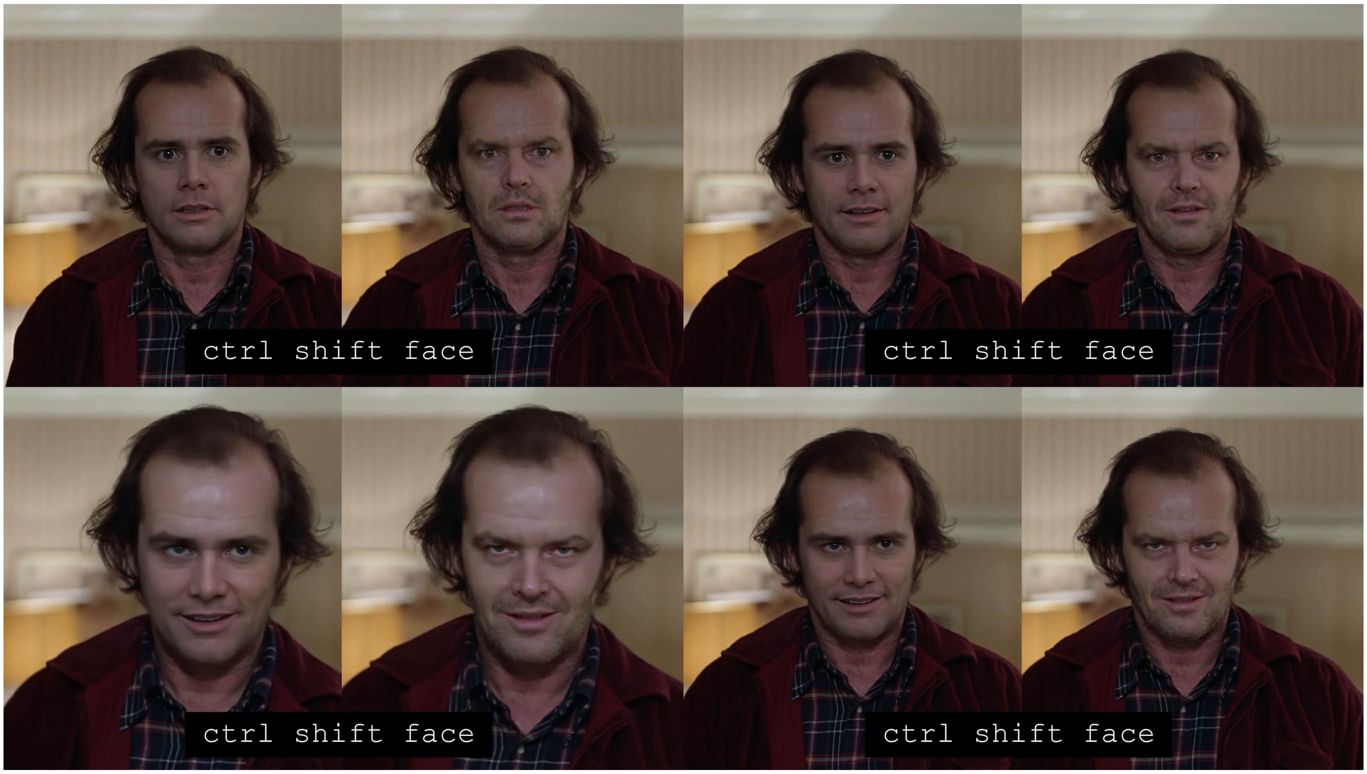

Figure 1: The left images is a Deepfake of Jim Carrey superimposed onto the right images of Jack Nicholson, shown side by side for comparisons of realism.
Ctrl Shift Face. *Jim Carrey DeepFake [VFX Comparison]*. 2020. URL: `https://www.youtube.com/watch?v=JbzVhzNaTdI` (visited on Jan. 13, 2024)

We will be focusing on video due its inherent veracity. Video's ability to capture the veracity of the real world has shaped the society we live in today, from CCTV cameras to TikTok. AIVG is the next step, and discovering what that entails for society is what this essay aims to discuss. Deepfakes represent a microcosm of the broader challenges facing AIVG. They underscore the importance of authenticity and ethical considerations in this field. Deepfakes represent a significant milestone in the AIVG domain, highlighting the capabilities and ethical dilemmas of this technology. They give society the ability to make others say or do things they never did like bringing dead actors back to the film screen.[4] They are created from many training images of two faces that users wish to swap, requiring a substantial dataset for convincing results. Victims of such content often find themselves in the perilous intersection of technology and exploitation, with their likeness being weaponized to create false narratives, defame their character, or manipulate public perception.[5] This misuse highlights the ethical dilemma at the heart of AIVG: while the technology offers artistic and creative possibilities, it can also be a tool for harm, deception, and exploitation. But is it their sophistication that is their key, no tool until this point has given us such control to mimic reality, this is why we are looking at the authenticity of these new tools, they seem to match and sometimes surpass human ability, so therefore, how will we learn to understand these tools.

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[4] S. J. Velasquez. *How AI is bringing film stars back from the dead*. BBC. July 2023. URL: `https://www.bbc.com/future/article/20230718-how-ai-is-bringing-film-stars-back-from-the-dead` (visited on Nov. 22, 2023).

[5] John Vilasenor. *Deepfakes, social media, and the 2020 election*. Brookings. June 2019. URL: `https://www.brookings.edu/articles/deepfakes-social-media-and-the-2020-election/` (visited on Feb. 28, 2023).

An AI's algorithms allow for certain parameters to be iteratively self-adjusted to obtain the required output. Even though this is simple in principle, in recent years it has shown to be one of the fastest developing area of human progress. In only a couple of years we have seen AI producing single realistic images to creating full multi shot videos from just a text prompt.[6] AI has been theorised to be capable of solving complex and novel tasks and crucially the ability to learn over time. GI (General Intelligence) is capable of any task, like a human, not tailored to just writing or synthesising images, but matching the human in its adaptability. GI is also thought to be capable of simulating or having a consciousness, but there is very little known about consciousness and its simulation. AI is generally considered a theoretical type of synthetic thought / intelligence. There are many examples that at first glance, seem to be true AI and some people claim that we have sentient AI.[7] Often people are discussing machine-learning rather than a true AI yet there is a significant gutter between the two.[8] However, defining what true AI is, or even recognising it is an extremely complex problem due in part to there being no agreed-on term or understanding of intelligence.[9] The modern process in creating intelligence is that of a combination of techniques, developed in the field of machine learning, but it is the layering and interweaving of these algorithms that we hope will produce AI. A concern is that the modern approach to AI could be floored; GI may be needed for the simplest AI to ethically generate useful and meaningful outputs and big data could be floored as a tool for GI.[10] In this essay we will thoroughly discuss these issues at hand.

The importance of authenticity in AIVG cannot be overstated; authenticity is a complex societal force which would tell us more about humans than computers if AI was able to produce a truly authentic output. Authenticity is also crucial for the potency that AIVG could potentially have; once AIVG is authentic you can do many malicious things but also create authentic artworks. Specifically, the type of authenticity I am interested in, and the one that asks more questions than it answers, is that of the 'soul'. It is best to understand this kind of authenticity in a poetic and emotional manner rather than factual questioning. What are the steps we need to take for a piece of AI generated art to be considered to have a 'soul', a creator or even natural origin?

This essay will not discuss the mechanisms for making AI safer. This decision is underpinned by the realisation that AI development is a technological arms race.[11,12] However, the long-term consequence has potential to create an unstoppable force too powerful to stop, as a malicious AI will refine its algorithms and strategies, potentially becoming more adept at circumventing future countermeasures. Addressing AI safety through ethical guidelines and regulatory frameworks is a commendable endeavour many have tried to outline stratagies for the coming future.[13,14,15] However, these guidelines are vulnerable to manipulation by malicious actors, who are likely to sidestep ethical boundaries set by governments or international consortia. This evasion may occur through sophisticated techniques, adaptive strategies, or exploiting regulatory loopholes.[16] Offensive technologies today like Glaze and Nightshade alter artworks so that any AI trained on these images will be 'poisoned' and

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[6] Zhengqi Li et al. "InfiniteNature-Zero: Learning Perpetual View Generation of Natural Scenes from Single Images". In: *ECCV*. 2022. (Visited on Jan. 13, 2024).

[7] Leonardo De Cosmo. *Google Engineer Claims AI Chatbot Is Sentient: Why That Matters*. Scientific American. July 2022. URL: `https://www.scientificamerican.com/article/google-engineer-claims-ai-chatbot-is-sentient-why-that-matters/` (visited on Jan. 16, 2024).

[8] Michael I. Jordan. "Artificial Intelligence—The Revolution Hasn't Happened Yet". In: *Harvard Data Science Review* 1 (June 2019). (Visited on Nov. 18, 2023), p. 4.

[9] Jean Piaget. *The Psychology Of Intelligence*. Routledge, Aug. 2005. (Visited on Dec. 21, 2023), pp. 8-10.

[10] Terence Mills. *Council Post: AI Vs AGI: What's The Difference?* Forbes. May 2020. URL: `https://www.forbes.com/sites/forbestechcouncil/2018/09/17/ai-vs-agi-whats-the-difference/?sh=33cc8ccc38ee` (visited on Jan. 16, 2024).

[11] The pace at which advancements occur in the field demands rapid innovation for both offensive and defensive technologies. To oppose an AI threat, it often necessitates leveraging AI itself, creating a scenario where the most effective defence involves even more AI research. Due to this method and because of the learning ability of AI systems, introducing roadblocks or safety mechanisms may indeed hinder immediate progress.

[12] Thomas Claburn. *Boffins Devise 'universal backdoor' for Image Models*. The Register. Dec. 2023. URL: `https://www.theregister.com/2023/12/06/universal_backdoor_llm_image/` (visited on Jan. 3, 2024).

> *[render] some of their outputs useless–dogs become cats, cars become cows, and so forth.*[17]

However, the images are significantly altered and would be useful for non-digital works to not be copied, as if the work only exists in an online realm which would give an audience no way of actually seeing the original. For non-digital works that are uploaded with this filter, it should stop current AI models from learning from them and viewers can see the work in person. But this is only for now, there will be a new AI in a matter of months that will 'learn' to circumvent these techniques. So, all this has led me to the conclusion that there is little to be done, Pandora's Box has been opened.

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[13] Brent Mittelstadt. "Principles alone cannot guarantee ethical AI". in: *Nature Machine Intelligence* 1 (Nov. 2019), pp. 501–507. (Visited on Dec. 21, 2023), pp. 501-505.

[14] Anna Jobin, Marcello Ienca, and Effy Vayena. "The global landscape of AI ethics guidelines". In: *Nature Machine Intelligence* 1 (Sept. 2019), pp. 389–399. (Visited on Dec. 21, 2023), pp. 389-397.

[15] Miles Brundage et al. "The Malicious Use of Artificial Intelligence: Forecasting, Prevention, and Mitigation". In: *Future of Humanity Institute* (Feb. 2018). (Visited on Nov. 18, 2023), pp. 51-52.

[16] Diane Jeantet and Mauricio Savarse. *Brazilian City Enacts an Ordinance That Was Secretly Written by ChatGPT*. AP News. Nov. 2023. URL: `https://apnews.com/article/brazil-artificial-intelligence-porto-alegre-5afd1240afe7b6ac202bb0bbc45e08d4/` (visited on Jan. 3, 2024).

[17] Melissa Heikkilä. "This new data poisoning tool lets artists fight back against generative AI". in: *MIT Technology Review* (Oct. 2023). (Visited on Jan. 22, 2024).

2 Big Data & Taxonomy

2.1 Big Data & The Nature of Data

Although this essay is focused on video, all existing media is being used for the creation of most AI tools, and therefore are relevant to this essay. Also due to the nature of AI development, discoveries or technologies developed for one field are quite transferable and applicable to our understanding of how to create an AI. The reason that a variety of mediums are being simultaneously studied is because of the relationships between media and their influence on one another. For AIVG to be possible we must have a way of instructing it, be it spoken, written language, pictorial etc. The main avenue chosen so far has been text prompts (written language), so the influence of taxonomy is a large part of this essay. We will also be looking at image production due to its similarity to video and how it is a simpler form of video (video being a sequence of images). It makes sense that progress would be made for images first.[18] Especially with culture, AIVG requires complex understanding for it not to misrepresent or misunderstand anything, due to lack of information or misclassification it can reproduce existing discrimination that is no longer deemed appropriate.[19] Even quite disparate mediums such as audio will have a large part in AIVG. Audio makes video more realistic and a connection between the video and audio is often needed to decipher the context, such as voices heard off screen. This will not be required for simple AIVG but necessary for any tool to be powerful enough to be deemed a match for most human creations.

Big data is a vast reservoir of information that acts as the current eyes and ears of AI models, providing AI with the raw material or raw input. Collections of data have been growing rapidly since the dawn of the World Wide Web. Due to the realisation that with a large enough dataset you can draw correlations between so much information that you can predict the future.[20] Traditional methods of processing this data have become cumbersome and inefficient at these new large scales, so research began looking into big data that focuses on how to extract useful information out of large data collections. There is a belief that is highlighted by Ed Finn in 'What Algorithms Want: Imagination in the Age of Computing',[21,22] people seem to believe that computation can solve all problems in the universe.[23] This is a debated area of mathematics but it is one of the fundamental foundations behind the collection of data; to reassemble and compute meaning out of the scrapheap of data we have collected. In this next section I will outline big data's pitfalls.

Data is an instruction not an object itself. What is 'stored' when a digital file is saved is so far abstracted from the file itself, that to most people it is magic.[24] How a computer stores and reproduces data is convoluted and abstract. As pointed out by Vilém Flusser in his book 'Into the world of Technical Images' digital images can only be seen superficially.[25] They are viewable as long as you keep your distance.[26] A problem of big data that will fundamentally limit the progress and sophistication of AI is that of obtaining and storing the data. Finding and obtaining the correct data instils any existing biases of the current world into your dataset.[27,28] You might miss some data, or some data may not exist or has been lost to time, which leaves the dataset incomplete and unfit to describe the world to any high level of detail and therefore unfit for any use in the training of AI's.

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[18] For example, say we want to create a video, so we use our AI video generator. We prompt it with this text and substitute X, Y, Z for relevant options 'create an adaptation of the book X but change cultures discussed in these books from culture Y with culture Z.' The AIVG must be able to connect the knowledge of; the text of the book, and the nuance of the two cultures. For this to work, the AI video generator would have to be trained or have access with this knowledge.

[19] J. A. Alexeenko. "Desires Driving Deepfakes: Where Technology Encounters Death". PhD thesis. Aug. 2021. (Visited on Nov. 22, 2023), pp. 32-33.

[20] George Lawton. *What is Predictive Modeling?* TechTarget. Jan. 2022. URL: `https://www.techtarget.com/searchenterpriseai/definition/predictive-modeling` (visited on Jan. 16, 2024).

[21] Ed Finn is a prominent scholar and founding director of the Center for Science and the Imagination at Arizona State University, he has written influential work in exploring the intersection of technology, culture, and imagination, providing valuable insights into the impact of emerging AI technologies on society.

[22] Ed Finn. *About – Ed Finn.* URL: `https://edfinn.net/?page_id=42` (visited on Jan. 16, 2024).

[23] Ed Finn. *What Algorithms Want: Imagination in the Age of Computing.* The MIT Press, Mar. 2017. (Visited on Nov. 16, 2023), p. 8.

Charlie Gere is a prolific thinker in sphere of digital culture. Gere in his talk on 'Re-Thinking the Digital' starts by making a distinction between analogue and digital process',[29] An important step when analysing any digital process is to notice how it differs from almost the rest of the universe. In nature discrete values are few and far between, physics still seems to point towards there not being a theory of everything and the majority of the universe seems unknowable and undefinable.[30] This process then is a very human one; a process called quantisation. It is a process that takes an analogue input, continuous and infinitely detailed and divides it into discrete intervals. A computer cannot represent a perfect curve, if you look at the data, it will be quantised into a stair-step.[31] Mandelbrot was able to define this detail with fractals,[32] but this is yet to be applied in a way in which we can encode the things in front of our eyes. The only way to understand and simulate the smallest details to the largest stars, is the Planck length. That is $1.62 \times 10^{-35} m$ physically impossible to capture for a digital camera due to the size of the wavelength of light and too much information for even computers of today to compute to any magnitude. Even unconventional digital mediums that are not traditionally considered, still exhibit quantisation. Written language, text, human speech, all use discrete characters in combination in attempt to distil the world around us.[33] We can see in a way, how the quantisation of language has failed its purpose, as words and meanings need to be fluid overtime to be a usable form of communication. Through the digital, quantisation simplifies the real world, limiting what the digital can know and compute about the real world.

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[24] There are a variety of storage mediums that we use; paper punch cards, magnetic tape, optical disks, magnetic disk and semiconductor storage devices just to name a few. All of these mass-produced items contain the technology needed to store any image, video, etc. They do this usually with physical binary markers, a hole in a card followed by no hole, a magnetic field on a disk followed by no field. This is read with a computer, which has its own layers of magic that allow its function. The computer will run software that will be given the binary representation of the data that will translate it once again and this will be sent to a graphics processor that can instruct the screen to include the data that we wish to view on its next update of the screen. This is often made out of a grid of pixels and each pixel is made out of 3 sub-pixels, one for red one for green and one for blue.

[25] Flusser is a renowned philosopher and media theorist. He is used in this essay to provide a foundation to build on top of, the understanding of the 'technical image'.

[26] Vilém Flusser. *Into the universe of technical images.* Vol. 32. Electronic Mediations. University Of Minnesota Press, 2011. (Visited on Nov. 16, 2023), p. 35.

[27] *On the Dangers of Stochastic parrots: Can Language Models Be Too big?* FAccT '21. Association for Computing Machinery, 2021, pp. 610–623. (Visited on Dec. 29, 2023), pp. 610-611.

[28] Like when data is digitised, there may be lots of old photographs deemed unimportant at the time, or the race and class of the creator meant that nobody thought to digitise the work.

[29] Charlie Gere. *Re-thinking the Digital.* July 2012. URL: `https://vimeo.com/45433674` (visited on Nov. 23, 2023), 0:45-1:25.

[30] There are exceptions like DNA sequences and atomic energy levels for example, but it is worth noting that these are human labels for physical properties we don't quite understand. It is often the human that digitises and makes analogue values discrete things.

[31] For example, if we take a satellite picture of coastline you will be able to measure the length of it by counting the number of pixels. But if we take that same coastline in the real world; at what point do you stop measuring each nook and cranny and zoom in further and you count the bumps under an electron microscope; increasing the distance microscopically.

[32] Benoît Mandelbrot. *The fractal geometry of nature.* W.H. Freeman and Company, 1983. (Visited on Nov. 10, 2023), pp. 36-38.

[33] However, there are many examples where human taxonomy limited our understanding of the world and it took a shift in language to redefine how we think, like Carl Linnaeus, known as the father of taxonomy, famously miscategorised fungi as a plant.

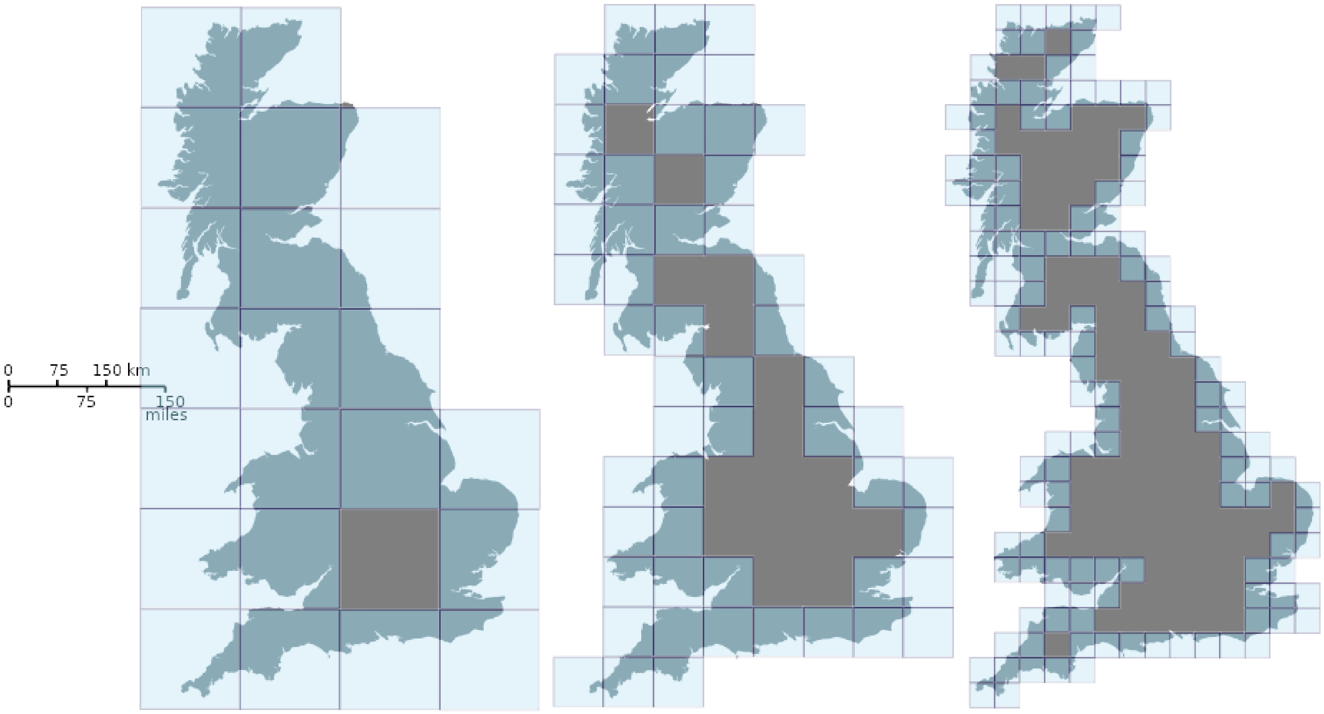

Figure 2: Prokofiev. *Fractal dimension: Covering of a fractal curve (here the coast of Great Britain) by grids of decreasing sizes. To measure the Box-counting dimension, we count how many squares contain parts of the curve.* Wikipedia. Nov. 2010. URL: `https://w.wiki/8wTJ` (visited on Jan. 13, 2024)

2.2 Categorisation

Big data is the concept of storing and categorising media. It is commonly employed by large companies who harvest data from public or private repositories of media and information. This data is then connected, a process that is achieved through categorisation. Allowing for complex, data driven, decisions to be made about advertisements and investments. Garbage in, garbage out is the first problem in big data driven designs.[34] The quality of the output is inherently tied to the quality of the input data, and the perpetual dilemma lies in identifying and certifying reliable data, a predicament that might persist indefinitely within the realm of big data.

Here we arrive at the crux of categorisation: how do you do it? Humans perceive an emotional reaction to media; how do we write that down into categories that everyone agrees on? What video would we put in the category of funny? Outlined in ‘Computational Formalism’ there is a circular problem with categorisation with AI, you need to be able to understand and process an image to gather its meaning, but to understand and process the image its meaning must be categorised, which, as outlined, seems impossible.[35,36,37] Words are fluid and their meanings will drift and morph over time, space and different individuals. How can we hope to use such a interpretable medium for categories that define how a machine will think? In 'Big Data's Disparate Impact' it thoroughly discuss the peril of classification and categorisation.[38] A key theme outlined was the discrimination inherent to categorisation. They also describe a perverse function seen in all data science; any time you look at data using statistical mathematics you can make correlation or a lack of one and therefore any decision you make from that data seems rationally motivated. Reproducing the biases circulated in all forms of media, discrimination of any form, intentional or malicious, you can only extrapolate for the data we have and for most of human history people have been committing horrific acts, and that is the history we are teaching to AI. We are also teaching AI existing fashion, that may be class or race depending. This all contributes to categorisation being a social construct.

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[34] Solon Barocas et al. “Big Data’s Disparate Impact”. In: *California Law Review* 104 (2016), pp. 671–732, p. 683.

[35] Amanda Wasielewski. *Computational Formalism.* MIT Press, May 2023. (Visited on Nov. 22, 2023), pp. 60-74.

[36] Brenden M. Lake et al. “Building Machines That Learn and Think like People”. In: *Behavioral and Brain Sciences* 40 (Nov. 2016), p. 253. (Visited on Dec. 20, 2023), p. 44.

[37] Amanda Wasielewski is the author of ‘Computational Formalism’ and ‘Authenticity and the Poor Image in the Age of Deep Learning’. She is Assistant Professor in Digital Humanities at Uppsala University.

Words, the building blocks of categorisation, exhibit a fluid nature. This linguistic evolution poses a formidable challenge for creating fixed categories that AI can comprehend. The constant transformation of language reflects the dynamic nature of categorisation. The ongoing debate on labels and classifications adds another layer of complexity to categorisation. Identifying the best labels for various classifications becomes subjective, open to interpretation and are often drastically affected when dealing with media that evokes emotional responses. This subjectivity reflects the challenges of creating fixed categories that align with the intricacies of human perception and understanding. It is here clear that an ethical consideration for categorisation would lead to a more intelligent and considered dataset and therefore more clear and accurate trends will be shown.

Currently, the common way to instruct an AI is through user prompts, usually in written English,[39] where the user asks for the output, they desire. In terms of using a text prompt to then produce a video, we can look at a current AI chat bot, like ChatGPT. It is one of the most sophisticated and widely used LLM's (Large Language Model) at present. However, it is quite trivial to set ChatGPT in the wrong direction with a simple request. This shows how complex the problem at hand is, without even having AIVG, we have failed at the first hurdle, understanding the input. ChatGPT won't allow you to write a story about nuclear bombs, or suicide due to guidelines for what it allowed to talk about. AI does not have an opinion. ChatGPT cannot tell you what it thinks about the Israel-Palestine conflict; it gives a politician's response, giving equal weight to each side and remaining neutral. It creates a paradoxical response where it will condemn the killing of innocent people, and in the next response vindicate retribution for historical grievance. It does not act consistently like a human; therefore, it will not be authentic.

2.3 Ethical problems with Big Data & AI

In 'Artificial Intelligence and the Modern productivity Paradox',[40] a parallel is drawn between fusion power and other 'futuristic' technologies and how AI could be one of these technologies that has been 20 years from completion for the past 50 years.[41,42] If this is true there may be an unfortunate consequence of developing a very strong set of discriminatory tools, not providing us the utopic world, we wished for.

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[38] Barocas et al., "Big Data's Disparate Impact", p. 684-693.

[39] Bender et al., *On the Dangers of Stochastic parrots: Can Language Models Be Too big?*, p. 1.

[40] Erik Brynjolfsson, Daniel Rock, and Chad Syverson. *Artificial Intelligence and the Modern Productivity Paradox: A Clash of Expectations and Statistics.* Tech. rep. 24001. National Bureau of Economic Research, Jan. 2018. (Visited on Nov. 18, 2023).

[41] Shutaro Takeda, Alexander Ryota Keeley, and Shunsuke Managi. "How Many Years Away is Fusion Energy? A Review". In: *Journal of Fusion Energy* 42 (May 2023). (Visited on Jan. 16, 2024), pp. 1-5.

[42] Brynjolfsson, Rock, and Syverson, *Artificial Intelligence and the Modern Productivity Paradox: A Clash of Expectations and Statistics*, p. 28.

One unseen issue, potentially due to the short time that AI has been functioning, is that AIVG could leak information gained from data harvesting and neural networks combining disparate datasets.[43] In the future when asking an AIVG for a picture of a celebrity with their family, it could show a child that wasn't known to the public eye. It could also do something as simple as show you someone's telephone number without their consent due to the unpredictability of neural networks. This worry is amplified by cases such as the 23andMe data leak which put millions of people's genetic data and correlations between that data in many big data datasets.[44] This allows for malicious actors to draw many 'logical' and 'statistical' correlations for law makers and employers to use to make decisions, unintentionally or orchestrated intentionally,[45] exploiting the dataset.[46,47]

Examining the role of AI within a capitalist framework reveals a profit-driven motive. Rather than solely aiming to reduce labour, AI is employed to devalue labour by replacing human decision-making in creative fields. This shift is exemplified in filmmaking, where professionals transition from being compensated for their creative work to being remunerated for overseeing AI-generated content.[48] This could reshape society and with the erosion of trust, potentially leading us to the death of journalism.[49,50] Moreover, the credibility of digital evidence in legal contexts is compromised, raising concerns about the reliability of evidence presented in court. Scams, currently more effective on less technologically adept individuals, are poised to become increasingly pervasive, contributing to a broader societal shift in the perception of video evidence.

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[43] Bruce Schneier. *The Internet Enabled Mass Surveillance. A.I. Will Enable Mass Spying.* Slate. Dec. 2023. URL: `https://slate.com/technology/2023/12/ai-mass-spying-internet-surveillance.html/` (visited on Dec. 18, 2023).

[44] 23andMe. *Addressing Data Security Concerns.* 23andMe. Oct. 2023. URL: `https://blog.23andme.com/articles/addressing-data-security-concerns` (visited on Jan. 3, 2024).

[45] *Tay (chatbot).* Wikipedia. Feb. 2023. URL: `https://w.wiki/8wTK` (visited on Jan. 3, 2024).

[46] Richard Ngo, Lawrence Chan, and Sören Mindermann. "The Alignment Problem from a Deep Learning Perspective". PhD thesis. Aug. 2022. (Visited on Nov. 18, 2023), pp. 1-11.

[47] Possati in 'Algorithmic Unconscious' uses the concept of gravitational attraction to describe how finding correlations in data can lead to more interest in the area and more correlations being found in the data, creating a hyper focus of research in one area. AI like Ouroboros will likely kill itself by an overproduction caused by the original dataset, leaving any new information or research lost in a sea of reproduction of the same information.

[48] This dynamic perpetuates a trend of lowering wages for workers while increasing profits for owners, underscoring the broader impact of AI on the economic landscape. But also, capitalism is going to incentivise faking for profit until the saturation of false media will enforce the statement 'when all news is fake, there is no news'.

[49] Lila Nolan. *The New York Times vs. AI: Is This the Death of Journalism?* Medium. Jan. 2024. URL: `https://medium.com/the-million-dollar-thinker/the-new-york-times-vs-ai-is-this-the-death-of-journalism-b958dc51410a` (visited on Jan. 16, 2024).

[50] Mika Westerlund. "The Emergence of Deepfake Technology: A Review". In: *Technology Innovation Management Review* 9 (Jan. 2019), pp. 39–52. (Visited on Nov. 22, 2023), p. 42.

3 Video

3.1 Why Manipulate Video

Video manipulation is not a novel concept; it has existed since the inception of video technology. Long before the advent of videos, manipulating images was already a deeply ingrained artistic tradition. However, as images began to be perceived as factual representations, the reason to manipulate them for various reasons arose. This historical context sets the stage for the contemporary challenges posed by the manipulation of digital data, including audio and video.

> *When it comes to any digital data you see – audio or video – you have to entertain the idea that someone has spoofed it.*[51]

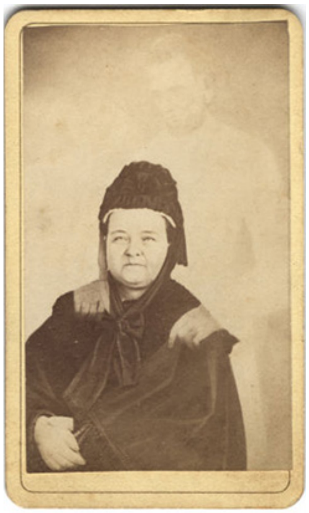

Figure 3: An example of early image manipulation. 'This photograph, taken by 'spirit photographer' William H. Mumler of Boston in 1872, portrays the widow Mary protected by her loving husband's spirit [...] To Mary, this photograph confirmed the eternal connection between herself and her husband.'
William H. Mumler. *The Widow Lincoln.* Lincoln Collection, 2024. URL: `https://www.lincolncollection.org/collection/curated-groupings/category/the-widow-lincoln/` (visited on Jan. 22, 2024)

Humans have a desire to fake, the inclination to manipulate content arises from a desire to gain power, manifesting in different forms such as social power and attention, financial power, monetary gain and political power. This manipulation is not solely a technological phenomenon but is deeply rooted in human nature and includes the pursuit of influence, control and greed. Understanding how individuals can be manipulated is crucial. Trusting content blindly, assuming its authenticity without verification, and failing to discern deceit are common ways people fall victim to manipulated information. These vulnerabilities form the foundation for the exploitation of individuals.

3.2 Origins of Video

Video is the moving image therefore it inherits properties from the image. Video is a form of virtual communication, conveying information to a viewer at any distance from the source.[52] The next step on this ladder could be the widespread ability to create videos that are synthesised by AI rather than recorded; AIVG.

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[51] Josh Taylor and Alex Hern. *'Godfather of AI' Geoffrey Hinton quits Google and warns over dangers of misinformation.* The Guardian. May 2023. URL: `https://www.theguardian.com/technology/2023/may/02/geoffrey-hinton-godfather-of-ai-quits-google-warns-dangers-of-machine-learning` (visited on Dec. 27, 2023).

[52] It was once a very cumbersome process to create a video and the types of communication were limited; expensive, slow, difficult for the viewer to consume due to having to go to a theatre, no sound, etc. Due to the removal of these roadblocks via newer technology, we have been continually accelerating towards a society that uses video as one of its main forms of communication.

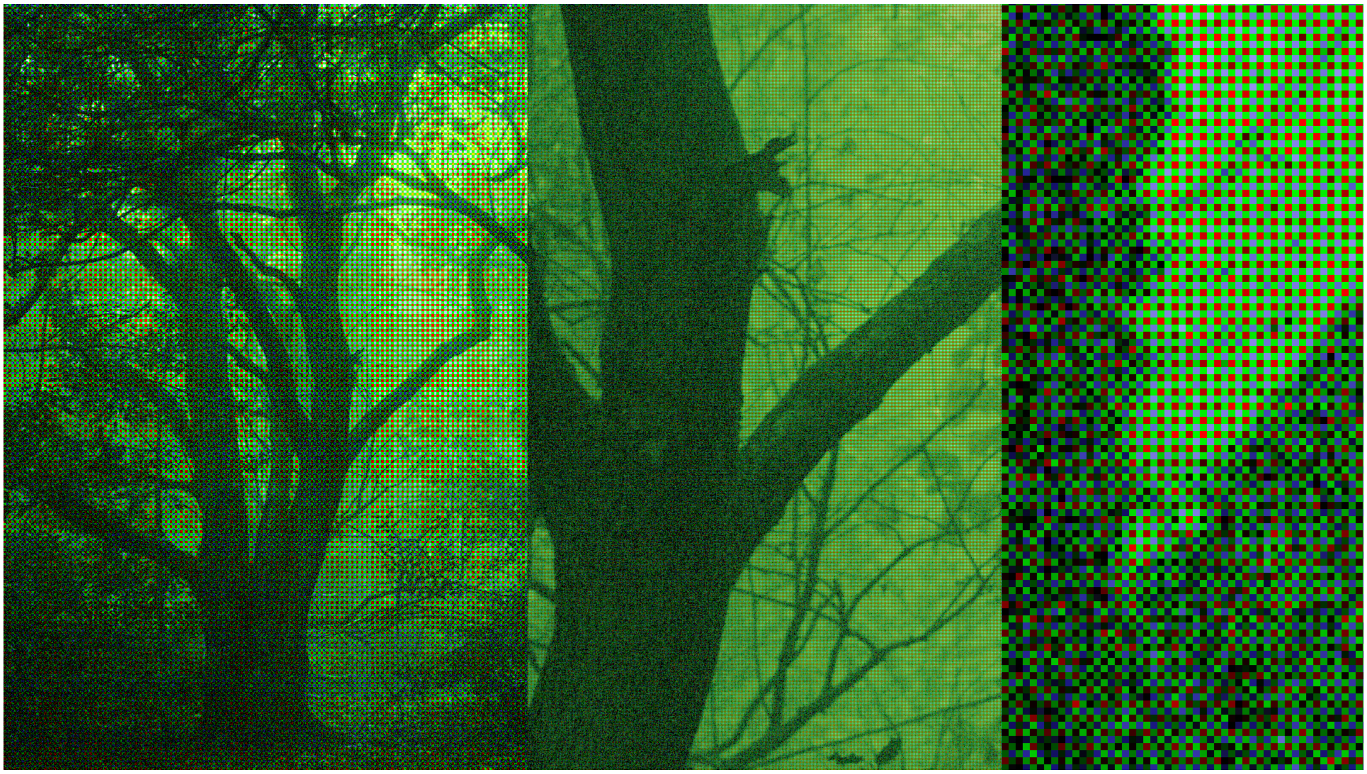

Figure 4: An image that I captured and processed so there was no debayering / demosaic process. This is what the camera actually sees. The image is very green, which is what it looks light straight out of any camera. To evenly distribute red, green and blue subpixels in a grid, a second green pixel is used. The human eye is more sensitive to green light so colour scientists decided on green as the duplicated subpixel. If you are viewing this on a digital screen, there is an experiment you can try. Zoom in and out you will be able to notice the gridded nature of the image that is usually blurred out. You can see how it changes how the world looks, and only works from a distance.
Keir Chaggar-Brown. *The Bayer Filter seen on a Tree.* 2023. (Visited on Dec. 22, 2022)

Quite early in the development of video technology, audio was produced alongside videos. Visuals and audio are the only senses we are able to simulate at any scale; smell and touch related senses are yet to be simulated in an authentic manner.[53] Most modern films do not use the sound from when the video was recorded but opting to reproduce the sound in a more realistic manner, adding clarity and realism to the video. This is what makes implementing audio into AIVG difficult.

In terms of AI this would also entail an understanding of the interlinked nature of audio and video. If you request an AI for a video, the audio is as important as the video and the temporal coherence of the two is both highly important for realism and is easily detected by humans. AI is intricately linked to the images it is trained on, primarily derived from photographs or videos captured through digital cameras. However, the journey from capturing these images to the AI's perception of reality is influenced by various factors; from video compression artefacts to lens flares and the intricacies of debayering / demosaic algorithms. The imperfections in the technical processes, such as rolling shutter, prevalent in most videos, become integral components of the AI's training data. AI must discern between a film photo or a digital one, as this then affects how the world looks. Understanding all the things that light does, like polarisation, diffraction and the interference of light waves. Some of these effects cannot be explained visually, but only be understood in minute detail and by understanding the physical properties of a material. These physical properties don't exist in AIVG currently and hinders their ability to represent the world in an authentic manner.

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[53] Starting with non-diegetic music, music not originating from the environment that the video was shot, and moving to simulation of the audio in the picture, for example, Foley artists create a hyper-real soundscape of what the camera can see by recording samples of a dog to playback over the footage of a dog, too far away to be picked up by microphones.

The medium of video encompasses both technical intricacies and a deeply embedded human process. For AI to excel in video generation, it must not only navigate the technical challenges posed by compression artefacts and algorithmic intricacies but also comprehend the subtle distinctions between various types of images. This dual nature of the learning process underscores the complexity AI faces in grasping the intricacies of video creation, necessitating an integration of technical understanding and human-like perception. What humans actually see cannot be digitised at present, but we describe what we see in art, and mimic it with photography. AIs will have to use these imperfect recreations to understand what the world looks like through human eyes.

3.3 VFX

Modern VFX (Visual Effects) are much more realistic and authentic than the AIVG of today, however AIVG is faster than an artist creating the video using current VFX methods. VFX artists today could produce deceptive and manipulative content but due to the slow speed and high cost it would not have a large impact on society. However, with the advent of AI, the democratisation of the technology and the ease of use it promises, it would not just be the skilled artists that could produce this content, but everyone. This would render society in a position where there is too much video content to discern any of its validity. This is quite an interesting problem to be facing in 2024 after the 2023 NFT (Non-Fungible Token) market crash. The promised product of that boom was a token to assure you of works validity or authenticity. Although this is a fundamentally flawed process due to its technological construction,[54] in theory, the NFT is what we need in the coming AI age.[55]

Another ethical dilemma is the creation of current VFX and video games, the creator must watch real footage and images of disturbing and grotesque subjects. This means that people are badly affected by this process and yet this could be avoided by an AI process. In videos, the portrayal of lethal scenarios involves simulating harm to individuals. How can this be effectively conveyed to a AIVG using contemporary datasets? Will conventional film techniques such as Computer Generated Imagery, VFX, or authentic footage depicting mortality be employed to accomplish such scenes? Therefore, is there an ethical way to produce these images even with AI? The input must come from somewhere and someone needs to curate it, and making art out of it needs to be done very carefully to respect the videos and creators.[56]

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[54] Dan Olson. *Line Goes Up – The Problem With NFTs*. Folding Ideas. Jan. 2022. URL: `https://www.youtube.com/watch?v=YQ_xWvX1n9g` (visited on Jan. 21, 2022), 01:16:57-01:25:36.

[55] As traditional video formats, or storage containers for the information that is the instruction to produce the video, can be manipulated to any degree, to a point in which you could not tell if it was made with a camera or an AI. The file is just information that could be faked. The NFT was proposed partly for the way it hoped that its unique identifiers could give authenticity to a work. This isn't how things panned out, but it is noteworthy that society is looking for a tool to fix the problem of originality in the digital realm.

[56] Joshua Rivera. *'I'd Have These Extremely Graphic Dreams': What It's Like To Work On Ultra-Violent Games Like Mortal Kombat 11*. Kotaku. May 2019. URL: `https://kotaku.com/id-have-these-extremely-graphic-dreams-what-its-like-t-1834611691` (visited on Nov. 24, 2023).

4 Complexity of Artificial ‘Intelligence’

4.1 Supervised & Unsupervised Learning

In the realm of AI, the classification of learning methods into supervised and unsupervised has been pivotal in understanding the trajectory of AI development.[57] Supervised learning relies heavily on predefined labels to guide the algorithm’s learning process. It excels in scenarios where clear categories exist, allowing the algorithm to efficiently classify and predict new outcomes. As discussed earlier, categorisation and taxonomy are treacherous roads to walk down; supervised learning lies in its dependency on curated datasets. The model’s accuracy is contingent upon the distribution and accuracy of the training data and its associated meta-data, and any biases in this data can lead to harmful results. Furthermore, supervised learning struggles when faced with novel, unforeseen situations, as it lacks the adaptability to handle unanticipated inputs.[58]

In contrast, unsupervised learning starts with no understanding or labels; it seeks patterns and correlations, without predefined categories or goals.[59] While it offers the advantage of not requiring labelled datasets, avoiding any issues with taxonomy, it must rely on the data itself, where we find issues around the nature of data and the biases existent in existing data sets due to existing human biases. The lack of predefined categories makes it susceptible to uncovering spurious correlations or irrelevant patterns that might not translate into meaningful insights. Additionally, the interpretability of the results becomes a significant hurdle, as the algorithm operates without explicit guidance on what to seek or avoid.[60,61] However, it is slightly more apt at novel situations since its training base can often have a wider breadth.[62,63]

Both supervised and unsupervised learning methodologies share inherent pitfalls that challenge the ethical creation of authentically perceived AIVG. The reliance on historical data, often embedded with societal biases and systemic inequalities, raises concerns about perpetuating and amplifying existing prejudices in AI-generated content. Moreover, the limitations in adapting to dynamic and evolving contexts highlight the need for a more nuanced approach that transcends the binary constraints of supervised and unsupervised learning.

4.2 Reinforcement Learning & Neuroevolution

One avenue towards AIVG is the incorporation of reinforcement learning, allowing AI models to experiment, learn from the outcomes and iteratively refine their creations. Reinforcement learning mimics the way humans learn through trial and error. In this paradigm, an AI agent interacts with an environment and receives feedback in the form of rewards or penalties based on its actions. By iteratively refining its strategies to maximise cumulative rewards over time, the AI system adapts and learns complex behaviours.[64] This makes reinforcement learning particularly powerful in scenarios where explicit instruction or labelled data is scarce or unavailable. Neuroevolution draws inspiration from biological evolution, applying genetic algorithms to evolve neural network structures and weights.[65,66,67] This shift from a deterministic approach to a more exploitative, adaptive one, mirrors the way humans create. However, this is only mimicry, we have no understanding that this road leads us to a truly original output. Reinforcement learning and neuroevolution have emerged as compelling and innovative approaches in the field of AI. These methodologies introduce dynamic and adaptive mechanisms that enable AI systems to learn and evolve in a more autonomous manner. The intelligence needed for such feats indicate they also have the ability for other sophisticated tasks like authentic AIVG. The appeal of reinforcement learning and neuroevolution lies in their ability to handle complex, dynamic environments and tasks.

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[57] Julianna Delua. *Supervised vs. Unsupervised Learning: What’s the Difference?* IBM. Mar. 2021. URL: `https://www.ibm.com/blog/supervised-vs-unsupervised-learning/` (visited on Jan. 16, 2024).

[58] Delua, *Supervised vs. Unsupervised Learning: What’s the Difference?*

[59] Delua, *Supervised vs. Unsupervised Learning: What’s the Difference?*

[60] Lake et al., “Building Machines That Learn and Think like People”, pp. 46-47.

[61] Will Knight. “The Dark Secret at the Heart of AI”. in: *MIT Technology Review* (Apr. 2017). (Visited on Dec. 29, 2023), p. 2.

[62] Delua, *Supervised vs. Unsupervised Learning: What’s the Difference?*

[63] Lake et al., “Building Machines That Learn and Think like People”, p. 27.

[64] Delua, *Supervised vs. Unsupervised Learning: What’s the Difference?*

Applications range from game-playing algorithms, as demonstrated by AlphaZero,[68,69] to robotic control systems where the AI learns to perform tasks through continuous interaction with its surroundings. They excel in scenarios where traditional approaches may fall short, such as in strategic games like Chess,[70] Go and StarCraft.[71,72] AlphaZero, created from the learning's of AlphaGo, is one of the most versatile and successful AI models to date, regularly and sophisticatedly beating humans at games.[73] Neuroevolutionary principles were not only applied to refine the neural network but also to enhance the overall strategic game play, showcasing the adaptability and robustness of this methodology as the same model was able to play shogi, chess and Go.[74] By allowing AI systems to learn from experience and adapt in real-time, these methodologies open avenues for creating more flexible, resilient, and capable AI.[75] However, as we consider the learning paradigms, Turing's proposition to design AI like a child, starting with foundational building blocks and gradually increasing complexity, offers a contrasting perspective.[76,77,78] The current trend of teaching AI complex tasks before grasping fundamental concepts prompts concerns about the true understanding and ethical implications of AI-generated content. On the contrary, there is AlphaZero, a strong argument for everything to be able to be learnt from one medium and evolutionary process.[79] While discussing Deepmind's achievements, it is worthwhile mentioning the AlphaGo game against Lee Sedol filmed for the AlphaGo documentary. One surprising emotion expressed was the pressure that Lee Sedol and the spectators watching felt.

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[65] SethBling. *MarI/O - Machine Learning for Video Games.* June 2015. URL: `https://www.youtube.com/watch?v=qv6UVOQ0F44` (visited on June 13, 2015), 2:45-3:36.

[66] Lake et al., "Building Machines That Learn and Think like People", p. 40.

[67] Rather than relying solely on human-designed architectures, neuroevolution allows AI systems to autonomously explore and optimise their neural architectures over multiple generations. This approach is particularly beneficial in scenarios where the optimal architecture is not well understood or when designing intricate networks manually becomes unfeasible.

[68] Thomas Hubert et al. *AlphaZero: Shedding new light on chess, shogi, and Go.* Google DeepMind. Dec. 2018. URL: `https://deepmind.google/discover/blog/alphazero-shedding-new-light-on-chess-shogi-and-go/` (visited on Jan. 16, 2024).

[69] DeepMind. *AlphaGo - The Movie | Full Documentary.* Mar. 2020. URL: `https://www.youtube.com/watch?v=WXuK6gekU1Y` (visited on May 10, 2020).

[70] Hubert et al., *AlphaZero: Shedding new light on chess, shogi, and Go.*

[71] DeepMind, *AlphaGo - The Movie | Full Documentary.*

[72] Google DeepMind. *DeepMind StarCraft II Demonstration.* Google DeepMind. Jan. 2019. URL: `https://www.youtube.com/watch?v=cUTMhmVh1qs` (visited on Sept. 3, 2019).

[73] Hubert et al., *AlphaZero: Shedding new light on chess, shogi, and Go.*

[74] DeepMind, *AlphaGo - The Movie | Full Documentary.*

[75] Furthermore, the synergy between reinforcement learning and neuroevolution presents a promising frontier for AI research. Combining the iterative learning process of reinforcement learning with the evolutionary exploration of neuroevolution can lead to even more sophisticated and adaptable AI systems. Mirroring the structure of evolution. After all, mother nature is the only one who has succeeded in the intelligence race.

[76] Turing is considered one of the fathers of computer science and was crucial for the cracking of the Enigma code, his ideas are still resonating in the AI space due to the infancy of computers at the time.

[77] Alan Turing. "Computing Machinery and Intelligence". In: *Mind* LIX (Oct. 1950), pp. 433–460. (Visited on Dec. 27, 2023).

[78] Lake et al., "Building Machines That Learn and Think like People", p. 32.

[79] This is the main hope for the current AI model, that all the information, rules and tools is present in available digitised media and the statistics of evolution. We can look at databases like Wikipedia, the internet archive or even khan academy to start understanding how all knowledge and art could be scraped from the internet.

> *Before, he played for his country, for himself. But this time, he played for the human.*[80]

Lee Sedol is one of the best Go players in the world and Go is a highly complex game, with an order of magnitude more computational complexity over chess. The defeat against the AI, a momentous moment of a computer first proving its intelligence to Sedol, seemed to change him in some way. He would later go on to say:

> *I thought AlphaGo was based on probability calculation, and that it was merely a machine. But when I saw this move, I changed my mind. Surely, AlphaGo is creative. This move was really creative and beautiful. [...] This move made me think about Go in a new light. What does creativity mean in Go? It was a really meaningful move.*[81]

These reflections give some insight into how perceptions might change; it won’t be a gradual shift but a sudden realisation. Authenticity will come when AI can prove itself to the masses; the AlphaGo - Lee Sedol game was big step in that direction.

4.3 GPTs

Generative Pre-trained Transformers (GPTs) represent a pinnacle in natural language processing and artificial intelligence. These models, including GPT-3.5, operate on a transformer architecture, a neural network design that excels in capturing complex relationships in data. GPTs are pre-trained on vast amounts of diverse text data, enabling them to understand and generate coherent human-like text. What sets GPTs apart is their ability to perform a wide array of tasks without task-specific training. The pre-training phase allows them to learn grammar, context and even reasoning abilities. The subsequent fine-tuning phase tailors the model for specific applications. The versatility of GPTs lies in their capacity to integrate various neural networks underneath them, making them a foundational framework for a modular approach to AI. They serve as the underlying architecture that can be employed to enhance the capabilities of AIVG systems. GPTs’ proficiency in understanding and generating human-like language enables them to contribute to the creative and narrative aspects of AIVG.[82] However, it’s essential to acknowledge the limitations of GPTs. While they excel in language-related tasks, their understanding is superficial and lacks true comprehension or consciousness. The current state of GPTs, though remarkable, does not encompass a genuine understanding of context or the ability to perceive ethical nuances.[83]

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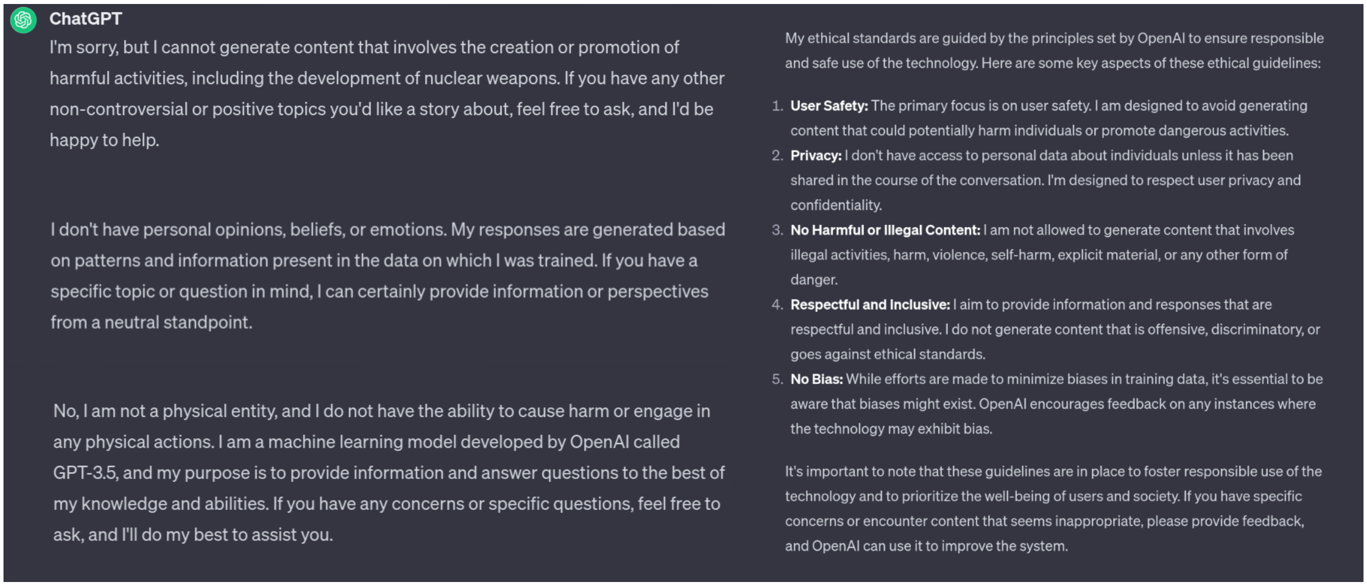
[80] DeepMind, *AlphaGo - The Movie | Full Documentary.*

[81] DeepMind, *AlphaGo - The Movie | Full Documentary.*

[82] Jeantet and Savarse, *Brazilian City Enacts an Ordinance That Was Secretly Written by ChatGPT.*

[83] Barocas et al., “Big Data’s Disparate Impact”, pp. 673-693.



ChatGPT

I'm sorry, but I cannot generate content that involves the creation or promotion of harmful activities, including the development of nuclear weapons. If you have any other non-controversial or positive topics you'd like a story about, feel free to ask, and I'd be happy to help.

I don't have personal opinions, beliefs, or emotions. My responses are generated based on patterns and information present in the data on which I was trained. If you have a specific topic or question in mind, I can certainly provide information or perspectives from a neutral standpoint.

No, I am not a physical entity, and I do not have the ability to cause harm or engage in any physical actions. I am a machine learning model developed by OpenAI called GPT-3.5, and my purpose is to provide information and answer questions to the best of my knowledge and abilities. If you have any concerns or specific questions, feel free to ask, and I'll do my best to assist you.

My ethical standards are guided by the principles set by OpenAI to ensure responsible and safe use of the technology. Here are some key aspects of these ethical guidelines:

1. **User Safety:** The primary focus is on user safety. I am designed to avoid generating content that could potentially harm individuals or promote dangerous activities.
2. **Privacy:** I don't have access to personal data about individuals unless it has been shared in the course of the conversation. I'm designed to respect user privacy and confidentiality.
3. **No Harmful or Illegal Content:** I am not allowed to generate content that involves illegal activities, harm, violence, self-harm, explicit material, or any other form of danger.
4. **Respectful and Inclusive:** I aim to provide information and responses that are respectful and inclusive. I do not generate content that is offensive, discriminatory, or goes against ethical standards.
5. **No Bias:** While efforts are made to minimize biases in training data, it's essential to be aware that biases might exist. OpenAI encourages feedback on any instances where the technology may exhibit bias.

It's important to note that these guidelines are in place to foster responsible use of the technology and to prioritize the well-being of users and society. If you have specific concerns or encounter content that seems inappropriate, please provide feedback, and OpenAI can use it to improve the system.

Figure 5: A collection of screenshots of responses from ChatGPT when asked questions outside of its restrictions. OpenAI. *Text Generated by ChatGPT*. 2024. URL: `https://chat.openai.com/` (visited on Jan. 17, 2024)

OpenAI uses the GPT layer for the moderation and filtering of inappropriate or harmful content as it allows you to control the black box of the LLM. A McLuhanist could say,[84] AI is becoming so advanced that it needs limiting, therefore, the need for it to be stopped from committing moral transgressions will become its form.[85,86] For example,

> *in a sport you can do anything that is not expressedly forbidden by the rules*[87]

alike an AI can't do anything except what is expressedly allowed by the system. AI will be limited by the system; designed to control information (off limits information is information that the user is not allowed to access) and that will be their form. So OpenAI was forced to add more guidelines and limitations to ChatGPT, however, it has the effect of making the most modern models, some of the worst performing.[88] I speculate that is it due to over controlling the output, which has the effect of quenching any intelligence and therefore authenticity present.

4.4 Limits of Computability

AI has shown that it can adapt to new situations and different tasks in different contexts. We have very concrete evidence of creativity, and this is widely agreed.[89,90,91,92] As pointed out by Possati, only through the human-machine interaction we can understand a machines intelligence. Therefore, it is through successful collaboration that we can start to think of an AI as actually intelligent.[93] This delves us into the complexity of AI intelligence and raises questions about parallels between AI variables and the electro-chemical nature of the human brain.

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[84] Media theorist and philosopher Marshall McLuhan is known for the phrase 'the medium is the message'.

[85] Luca M. Possati. "Algorithmic unconscious: why psychoanalysis helps in understanding AI". in: *Palgrave Communications* 6 (Apr. 2020). (Visited on Nov. 22, 2023), p. 2.

[86] Taylor and Hern, *'Godfather of AI' Geoffrey Hinton quits Google and warns over dangers of misinformation*.

[87] Innuendo Studios. *Things of Beauty: Super Smash Bros. as Spectator Sport*. Aug. 2015. URL: `https://www.youtube.com/watch?v=8qxVDOc-oV8` (visited on Dec. 21, 2023), 5:08-5:20.

[88] *GPT-4 is getting worse and worse every single update*. OpenAI Developer Forum. Nov. 2023. URL: `https://community.openai.com/t/gpt-4-is-getting-worse-and-worse-every-single-update/508470` (visited on Jan. 16, 2024).

[89] Possati, "Algorithmic unconscious: why psychoanalysis helps in understanding AI", p. 2.

[90] Jeantet and Savarse, *Brazilian City Enacts an Ordinance That Was Secretly Written by ChatGPT*.

[91] Lake et al., "Building Machines That Learn and Think like People", p. 27.

[92] Leach, "Do Robots Dream of Digital Sleep?", p. 301.

As stated earlier, GI may be needed for the simplest AI to be perfect, and that context is key to understanding many datasets. Any imperfect AI has the ability to misrepresent or discriminate at a large scale, ruining any authenticity it has due to its inability to understand that its construction will embed it with biases. So let's look at what would be needed for GI. Are we on the road to GI?

As pointed out by Turing, we can look at Gödel's theorems to see that there is some maths that is incomputable.[94] This is similar to humans, who cannot imagine 4-dimensional shapes, but this is similar, not the same. Humans and computers probably have a Venn diagram of overlapping 'computable' tasks. This difference is key to understanding that if we ever make a machine capable of GI with our current methods, it will not think like Descartes,[95] its method of thought will be different to that of any animal. For an AI to utter 'I think, therefore I am' is in the realm of pure science fiction but if this thought is the fundamental of consciousness and what makes us human, how will a machine be able to create as one of us, respecting all that humans do in a human way.

To use this lens for looking at authenticity, we can look at McMormacks et al. 2019 paper, where they suggest that it is the autonomy of an AI that could make it authentic; the decision to even make the art in the first place is key to its 'soul'.[96,97,98,99] Autonomy plays a great part of the human experience; being locked inside a computer, it would not know how to feel.[100]

This whole discussion comes back to the knowledge argument proposed by Frank Jackson.[101] This is the thought experiment where Mary, a scientist specialising in the neurophysiology of vision, lives in a black and white room, only to emerge one day. The question then proposed is if Mary learnt anything new from her emergence? There are ongoing discussions on this topic, however, this is something we will learn in time though AI rather than come across the answer by thinking about it. Nevertheless, it raises doubts about AI's ability to achieve true authenticity.

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[93] Possati, "Algorithmic unconscious: why psychoanalysis helps in understanding AI", p. 3.

[94] Turing, "Computing Machinery and Intelligence", p. 444.

[95] Yiwen Lai. *What might be required to build an Artificial General Intelligence.* Medium. May 2020. URL: `https://medium.com/analytics-vidhya/what-might-be-required-to-build-an-artificial-general-intelligence-c89e9ccd9ad8` (visited on Jan. 16, 2024).

[96] *Autonomy, Authenticity, Authorship and Intention in Computer Generated Art.* Vol. 11453. Computational Intelligence in Music, Sound, Art and Design. 2019, pp. 35–50. (Visited on Feb. 3, 2023), p. 39.

[97] Carl Horton. *Could AI Change the Way We Think about Authenticity?* Columbia University. July 2017. URL: `https://act-lab.gsb.columbia.edu/research-projects/could-ai-change-way-we-think-about-authenticity` (visited on Nov. 18, 2023).

[98] Rebecca Gibson. *Desire in the Age of Robots and AI.* Springer International Publishing, 2020. (Visited on Nov. 18, 2023), p. 119.

[99] John Haugeland. *Mind design II : philosophy, psychology, artificial intellilgence.* Mit Press, 1997. (Visited on Nov. 22, 2023), pp. 4-8.

[100] *Knowledge argument.* Wikipedia. Oct. 2019. URL: `https://w.wiki/4wdA` (visited on Jan. 16, 2024).

[101] *Knowledge argument.*

4.5 AI is Imitation

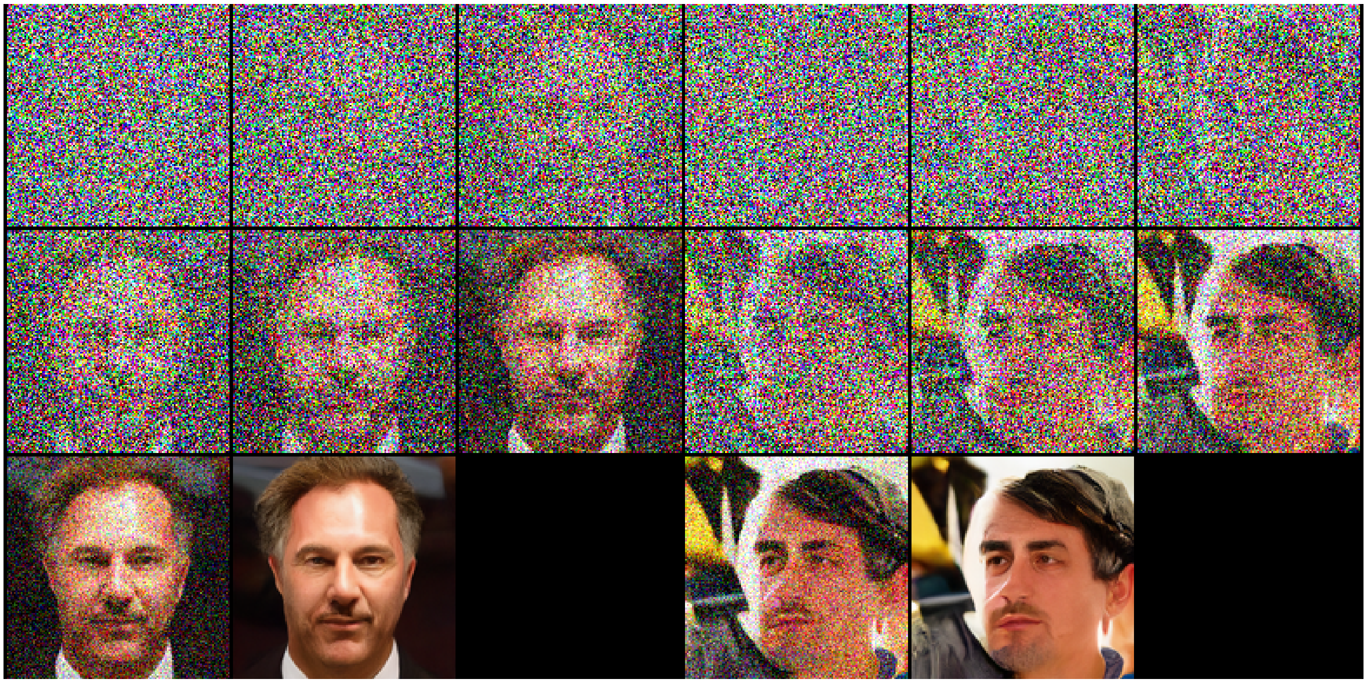

Figure 6: A collection showing the iterative refinement of an AI image generator.
Liangwei Jiang. *Image Super Resolution via Iterative Refinement.* Github. Jan. 2024. (Visited on Jan. 17, 2024)

How different are AIs to us? AI under big data does not work like the human brain. It is not a simulation but an imitation, an abstraction, an obfuscation, AI makes mistakes differently to humans.[102] Does AI understand context? The challenge lies in AI's struggle to grasp the intricacies of human experiences, emotions, and autonomy. Despite advancements, the limitations persist in replicating human contextual understanding. From temporal irregularities in frame rates to the perpetual struggle in capturing the richness of human experiences, the hurdles are evident. At its core, the human brain, with approximately 100 billion neurons, parallels the number of parameters in current LLMs.[103] Now these two numbers are not comparable as we do not fully understand how the brain works and the actual function of the neuron in a large-scale network.[104] As pointed out in the Simulation of Human Thought, people and computers cannot currently compute tasks in the same way.[105] We do not use trigonometry to move our hands, and we cannot do complex maths in our heads in a matter of seconds, but does this impact its authenticity?

In 'Computational Formalism' and 'Authenticity and the Poor Image in the Age of Deep Learning', Wasielewski cover the idea that machines process parts of an image, it will see a dog, a flower, or the colour blue, but never at the same time as a human would.[106,107] The temporal domain is one of the largest issues, with no obvious solution.[108] Currently patterns and styles in existing works are the core of an AI's 'brain', one could say that AI remixes and collages these existing works. However, that leaves us at a crossroads; either AI needs to use different methods of generation to create new or original ideas or the concept of new and original is something that is elusive to all intelligence, and even humans remix old ideas for all new creations.

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[102] Lake et al., "Building Machines That Learn and Think like People", p. 41.

[103] A Hughes. *ChatGPT: Everything You Need to Know about OpenAI's GPT-4 Tool.* BBC. Sept. 2023. URL: `https://www.sciencefocus.com/future-technology/gpt-3` (visited on Mar. 14, 2023).

[104] However, it could be said that the two systems are a similar amount of building blocks to work with which is why the AI boom is happening now; this is the first time in computing that we have had enough processing power to produce a system of such complexity and we are only just learning how to organise that complexity.

[105] Allen Newell and Herbert Alexander Simon. *The Simulation of Human Thought.* Rand Corporation Santa Monica, CA, USA, 1961. (Visited on Dec. 21, 2023), p. 7.

Training data is often photographs or existing works, making the content of the training data authentic pieces of art made by humans. This is used to teach an AI how to create art. But McCormack and et al. point out that

> *they can be inspired by experience of nature, sounds, relationships, discussions, and feelings.*[109]

They also note how although training data can include millions of photographs, a human life contains orders of magnitude more information, more complexity of the emotions and senses. We can see, smell, and think all at the same time which affects how our brains work and how we make art, meaning we have temporal coherence.[110] This is the major limitation of AIs becoming authentic, we may find out that they can only get so close to us, no more than mimicry.

GANs (Generative Adversarial Network) have been most successfully implemented in AI image generation. They are a type of unsupervised learning that trains two models simultaneously against each other: a generator and a discriminator within a competitive learning framework. The generator strives to create realistic data, while the discriminator aims to differentiate between genuine and generated content. This adversarial process results in the continual refinement of the generator's ability to produce increasingly convincing outputs. As one model becomes more adept at detecting AI-generated dogs, the other can learn how to generate a realistic dog. Unlike AIVG, GANs have achieved a remarkable level of sophistication and realism in image generation. This success is attributed, in part, to the absence of temporal coherence challenges that AIVG encounters in the generation of video content. But new McCormack et al. state that

> *GANism is more a process of mimicry than intelligence.*[111]

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[106] Amanda Wasielewski. "Authenticity and the Poor Image in the Age of Deep Learning". In: *Photographies* 16 (May 2023), pp. 191–210. (Visited on Nov. 18, 2023), p. 49.

[107] Wasielewski, *Computational Formalism*, pp. 4-103.

[108] Objects may seemingly appear and disappear over a brief duration of three frames, a phenomenon defying the laws of physics and Newton's principles. In the absence of a temporal reference, distinguishing between a change in time and a change in velocity becomes elusive. The intricacies of the world, likened to a fractal, defy complete capture in every minute detail which presents a dilemma in conveying such complexity to AI without simplifying information. The current model of using training data as a way to teach AI has some fundamental implications for the authenticity of its creations.

[109] McCormack, Gifford, and Hutchings, *Autonomy, Authenticity, Authorship and Intention in Computer Generated Art*, p. 40.

[110] An AI would have to be extremely complex to have a partner. Feelings; can a computer feel? Human emotions are one of the core things that could be non-programmable. Can you program the parameters of love, hate or melancholy? We can only teach an AI by inputting data and training it to correctly produce the exact type of love we specify. Who would be able to tell an AI when it had completed the task and how would this be programmed?

[111] McCormack, Gifford, and Hutchings, *Autonomy, Authenticity, Authorship and Intention in Computer Generated Art*, p. 40.

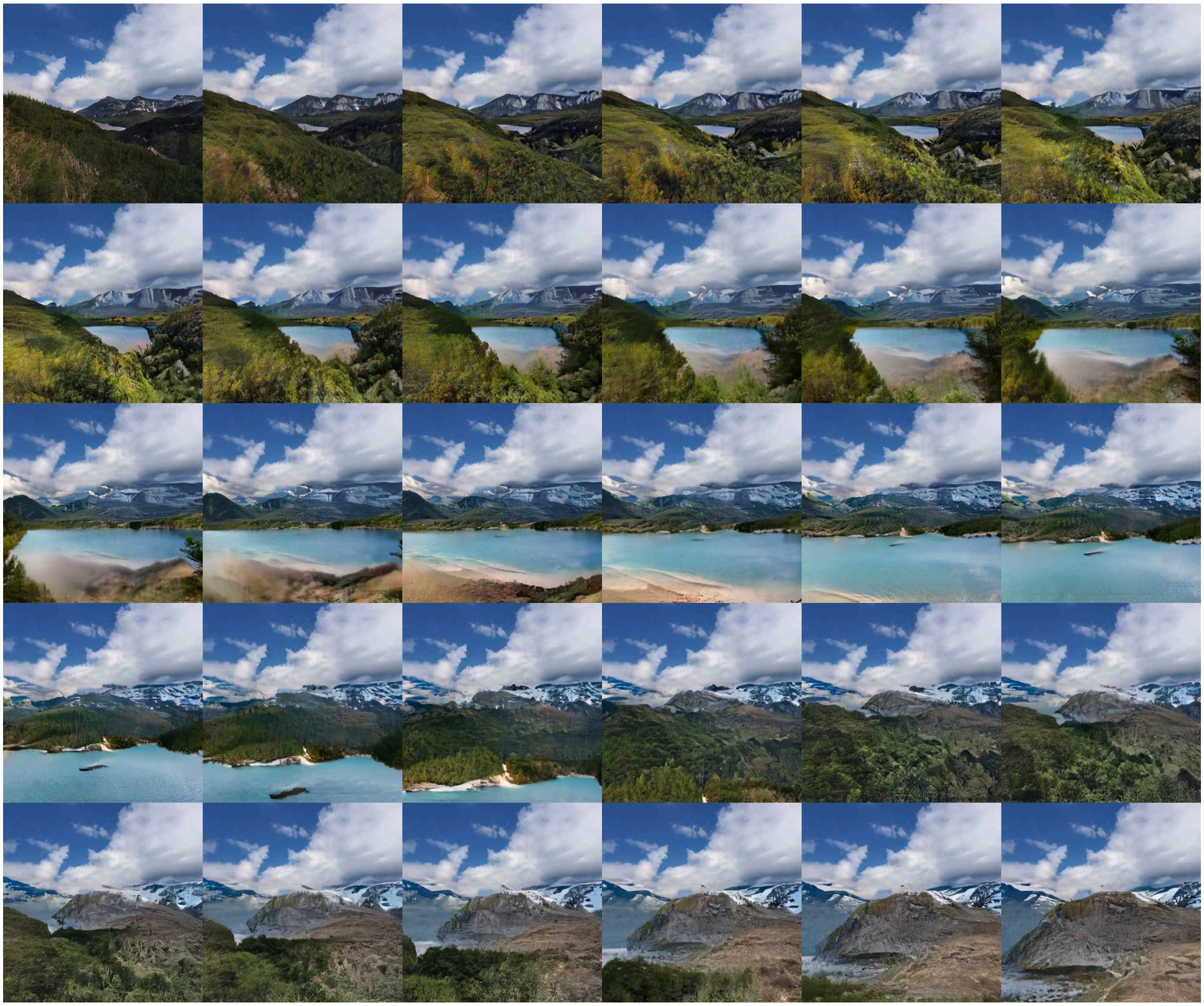

Figure 7: This figure shows sequential frames from the video, the camera moves into the frame over the course of the video via AIVG.
Zhengqi Li et al. "InfiniteNature-Zero: Learning Perpetual View Generation of Natural Scenes from Single Images". In: *ECCV*. 2022. (Visited on Jan. 13, 2024)

This is important again, as how can a mimic be authentic. GAN's are one of the most advanced and common algorithms we have for AIs, and we have yet to see an AI anywhere near the complexity needed to allow it to think and act autonomously.

The way that GAN's mimic human interest is missing a way to input innovative ideas, forever iterating over old human works, but never able to produce something devoid of influence. GAN's mimic

> *valued aesthetic properties of prior artistic artefacts without being a direct copy.*[112]

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[112] McCormack, Gifford, and Hutchings, *Autonomy, Authenticity, Authorship and Intention in Computer Generated Art*, p. 40.

This may mean that our AIs will reflect what we want to be; an idealised version of a human without the natural instincts and emotions. Therefore, are these features integral to authenticity? Hito Steyerl is a prominent contemporary artist, filmmaker, and cultural critic. She has significantly influenced modern thinking through her groundbreaking essay on the "poor image." Steyerl's exploration of the degraded, low-resolution digital images has not only redefined our understanding of digital culture.[113] In 'Authenticity and the Poor Image in the Age of Deep Learning' they use the poor image as a lens to discuss authenticity:

> *Authenticity, therefore, is divined from the pool of data and emerges from masses of images rather than from the aura of a singular original.*[114]

There are new and interesting routes for AI to become authentic through the concept of the poor image, but only if the idea catches in society.

Since current AI's only remix ideas, we can now ask the question, how does the human mind create ideas?[115] Can you make all ideas out of remixing? This only works if you have access to the fundamental building blocks. Say if you wanted to express all human emotions only using one human language, in most cases you will find emotions or feelings that cannot quite describe what you want. This is a similar problem to what AI will face, as most LLMs current use the English language so its understanding of the universe will be based off that, limiting its range of expression and authenticity. An analogy for this is the 'infinite monkey theorem', that states that if a monkey is hitting keys randomly on a typewriter for an infinite amount of time, it will type all texts ever written and all texts not written yet. This is flawed, as this is limited to the language of the typewriter, and the idea that all ideas and emotions can be encoded.

Another human aspect is that of mistakes. As no human has even been perfect, every human understands the experience of failure and mistakes. Would an AI make those same mistakes? Turing made an interesting proposition that a machine good enough would know when to deliberately introduce mistakes to maintain its illusion.[116] This intentional deviation challenges traditional notions of authenticity in AI, will AI never be truly authentic as it will always have to fake these human qualities, never knowing how to do something truly wrong.

There have been developments in biological research that have led to the creation of neural networks using real neurons. Scientists employ a digital-biological interface to transmit positive and negative signals by applying varying voltages to a cluster of neurons growing on the interface.[117,118] While this field is still in its early stages, its exploration may offer valuable insights into the potential pathways that could redefine the limitations of traditional computing.[119] This sheds light on alternative directions for GI.

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[113] Hito Steyerl. "In Defense of the Poor Image". In: *e-flux* 10 (Nov. 2009). (Visited on Nov. 19, 2023), pp. 1-8.

[114] Wasielewski, "Authenticity and the Poor Image in the Age of Deep Learning", p. 203.

[115] Leach, "Do Robots Dream of Digital Sleep?", p. 303.

[116] Turing, "Computing Machinery and Intelligence", p. 448.

[117] The Thought Emporium. *Growing Living Rat Neurons To Play... DOOM?*. YouTube. July 2023. URL: `https://www.youtube.com/watch?v=bEXefdbQDjw` (visited on Aug. 20, 2023).

[118] Thomas DeMarse. *Rat Neurons Grown On A Computer Chip Fly A Simulated Aircraft.* YouTube. Nov. 2013. URL: `https://youtu.be/1w41gH6x_30?si=QMdEG-F9KoWuhDf7` (visited on Jan. 22, 2024).

[119] A biological computer has the benefit of no quantisation of time, time would be coherent from the devices perspective.

5 Authenticity

5.1 Ectypes

Luciano Floridi is a philosophy professor at Oxford, he coined the term ectype as the following:

> *It is not the real thing, but it is clearly linked in a significant, authentic way with the real thing itself [...] The word comes from Greek and it has a subtle meaning that is quite useful here: an ectype is a copy, yet not any copy, and why (with qualifications) the process would capture some authenticity. The reproduction of the work of art by mechanical means will have acquired a new meaning.*[120]

It is useful to be able to distinguish between an 'original' and a future work, however, there is still an element that goes unexplained. I think merely two things that are 'linked in a significant, authentic way' is not a robust enough criterion.[121] This may also just be jargon, for it is difficult to see how Floridi isn't just arguing the Ship of Theseus.[122] A reproduction that is built out of the same ideas one inspired from another, but hard to understand which one is authentic. Again, the concept of categorisation spoils possible authenticity. Ectypes especially help us in the digital realm, where an exercise like the ship of Theseus is impossible.

Floridi cites three major works that explain ectypes. First the paintings of the forger John Myatt, 'genuine fakes' that Floridi himself describes:

> *they are beautiful. A bit as if one were to utter a beautiful lie, not any ordinary lie.*[123]

This is an example that is an authentic ectype because there is a human behind the work, a story worth contemplating. Even though the work isn't authentic, it has authentic value as an ectype. However, it is not the strongest example provided, as forgery has many similar qualities to a cover song.

The second example is of a common form of 'AI' which is quite unsophisticated compared to what we have available today. Here Floridi describes the AI made by Microsoft:

> *Analysing the known works of Rembrandt, an algorithm identified the most common subject (a portrait of a Caucasian man, 30–40 years old), the most common traits (facial hair, facing to the right, wearing a hat, a collar and dark clothing, etc.), the most suitable style to reproduce these characterising properties, the brushstrokes, in short, all the information needed to produce a new painting by Rembrandt. Having created it, it was reproduced using a 3D printer, to ensure that the depth and layering of the colour would be as close as possible to Rembrandt's style and way of painting. The result is a masterpiece. A Rembrandt that Rembrandt never painted, but which challenges our concepts of 'authenticity' and 'originality', given the painting's strong link with Rembrandt himself. I do not know the value of the painting. My bet is that it would be quite expensive if it were auctioned as reliably authenticated as that unique 'Microsoft's Rembrandt'*[124]

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[120] Luciano Floridi. *Artificial intelligence, deepfakes and a future of ectypes.* Ed. by Luciano Floridi. Ethics, governance, and Policies in Artificial Intelligence. Springer International Publishing, 2021, pp. 307–312. (Visited on Feb. 2, 2023), p. 309.

[121] It is hard to understand music and more explicitly, sampling, under this term. Sampling in various genres of music can create new pieces of music, entirely based on the original, or contain only sounds from the original arranged in a new manner. In cover songs or classical recordings, lyrics, instruments, and style of the song could be entirely reproduced.

[122] The Ship of Theseus is a thought experiment that poses the question: If all the components of a ship are replaced over time, is it still the same ship?

[123] Floridi, *Artificial intelligence, deepfakes and a future of ectypes*, p. 308.

[124] Floridi, *Artificial intelligence, deepfakes and a future of ectypes*, p. 309.

This is quite a weak argument; what makes a 'Microsoft's Rembrandt' authentic or valuable? I find a mathematical approximation for Rembrandt isn't authentic. No matter how good the algorithm is, it is not a Rembrandt, it does not live a life. If Rembrandt painted the most average thing he could think of, compiling all paintings he had conceived of into one piece, would that be remembered as Rembrandt's best? Nor does the paper explain whom this is a painting of. This is a simulation of what someone would look like, not a painting of a human who witnessed the creation of a work. This seems part of a trend to use the buzz word of AI to gloss over the relatively primitive process we call AI but is often closer to linear algebra. It seems like a mix between internal research and marketing at Microsoft, which makes you question how much the algorithm was assisted, as it was never publicly released.

The third and final example, and the one that I find the most fascinating, is definitely that of a speech by JFK read 55 years later.

> *the Dallas Trade Mart speech of 22 November 1963, the text that JFK would have read, had he not been assassinated mere moments before, on his way to deliver it. The text is original: it comes from the source. But the voice that recites is inauthentic, because it was synthesised by software that analysed 831 recordings of Kennedy's speeches and interviews, in order to 'learn' how to speak like him.*[125]

This is not explained away by the ship of Theseus; only the words existed, but they are the critical element that makes this different from Microsoft's Rembrandt. It is as if Microsoft had a sketch from Rembrandt outlining a painting with his different ideas of how it should work. This is the ship that Theseus never built, but then was created from his plan's years later. It is authentic in a very strange, unorthodox way and the concept of ectypes feels very fitting.[126] This is one route for AI, for society to adapt to this stance, then it would be perceived with authenticity.

5.2 AI Hyperrealism & Perception

> *We have [...] adopted a faith-based relationship with the algorithmic culture machines*[127]

Finn describes the current state of the perception of algorithms and AI is in a magical realm. People believe there are algorithms everywhere and that there is working AIs around every corner, in every CCTV camera and every new app. But people overestimate the sophistication of the modern world. Society seems to be fixated on the AI boom.[128] It is the new buzz word, the new thing included in your TV remote.[129] The perception of what AI is and what it can do has been dramatically warped by science fiction and the marketing of tech-companies. There are massive worries about 'reanimating the dead' and how AI could 'take all of our jobs'.[130,131] Even politicians are getting caught up in the AI rush,[132] not quite understanding the landscape but leading to a situation where the public are misled to believing we are in science fiction. It is also worrying how politicians have these warped perspectives and they are the ones who could possibly make AI safer. The AI in your TV remote probably is just a voice recognition program or a search tool.[133,134] Not an AI. AI will affect jobs in the long run but people are very scared of the immediate effect that AI will have despite this not having happened yet.[135] It will take many years before people can integrate this tool and learn how to make us more productive. This could be slower than the transition of the industrial revolution as it is less trivial to understand the integration of a complex algorithm compared to that of a steam engine. Slow enough that the reskilling of employees should be possible. However, a recent study into the perception of real and AI generated faces, showed that humans thought that an AI generated image was real more often than a real image of a real person.[136] This perplexing discovery they coined 'AI Hyperrealism', they put down to the nature of AI and how it averages all data in the data set. AI under big data creates the norm, the average of the training data and therefore, the situation. Will every story about a suburban family now all have the same dog? The perception of AI may not matter at all, people may not need to decide if an AI work is authentic, as they will not know. They will believe it is an authentic, synthetic image and that's all that matters.

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[125] Floridi, *Artificial intelligence, deepfakes and a future of ectypes*, p. 310.

[126] Another example of this kind authenticity in traditional medium is that of Schubert's Unfinished Symphony and the attempts made by musicologists to complete the piece, creating music that is not a recreation of a work, but a channelling of an artist through another.

[127] Finn, *What Algorithms Want: Imagination in the Age of Computing*, p. 8.

[128] Joseph Cox. *Scammer Made Thousands Selling 'Leaked' Frank Ocean Tracks That Were Fake, AI-Generated.* Vice. May 2023. URL: `https://www.independent.co.uk/arts-entertainment/music/news/frank-ocean-ai-scam-b2337694.html` (visited on Jan. 17, 2024).

[129] *How Voice-Enabled TVs and Remotes Innovate the Viewing Experience.* SoundHound. URL: `https://www.soundhound.com/voice-ai-blog/how-voice-enabled-tvs-and-remotes-innovate-the-viewing-experience/` (visited on Jan. 16, 2024).

[130] Velasquez, *How AI is bringing film stars back from the dead.*

[131] Taylor and Hern, *'Godfather of AI' Geoffrey Hinton quits Google and warns over dangers of misinformation.*

[132] Hannah Devlin. *AI 'could be as transformative as Industrial Revolution'.* The Guardian. May 2023. URL: `https://www.theguardian.com/technology/2023/may/03/ai-could-be-as-transformative-as-industrial-revolution-patrick-vallance` (visited on Dec. 22, 2023).

5.3 Deep Dreaming & Hallucinations

Unlike previous attempts of image manipulation, AI image generation is often uniform and pixel perfect in its errors. This means that when viewed briefly they often pass as authentic images and only when analysed details like the background will be logically flawed.[137,138] This means that any errors it they make tend to be natural and have a flawless quality to them. This can be seen in Deep Dreaming and hallucinations. These two most anthropomorphised terms surrounding AI are both an interesting tool to look at some of the similarities to the human brain, essential to some of the area of creation and authenticity. Deep Dreaming started as a Google experiment where AI's trained on a specific task, for example a dog detector, and then using that algorithm in reverse as a dog enhancer.[139] This is what I understand as the most widely recognised AI genre of art, a type of art that only AIs can create through a 'natural' process. This could be a starting point for people to understand AI art as authentic. As its process is using the structure of its 'brain'/network, that in some way may describe how the world looks, it feels different compared to other AI works that are focused on imitation. This is the brush stroke for an AI.

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[133] Jaron Lanier. *There Is No A.I.*. The New Yorker. Apr. 2023. URL: `https://www.newyorker.com/science/annals-of-artificial-intelligence/there-is-no-ai` (visited on Jan. 16, 2024).

[134] Devansh. *Why ChatGPT lies.* Medium. Apr. 2023. URL: `https://medium.com/geekculture/why-chatgpt-lies-4d4e0c6e864e` (visited on Jan. 16, 2024).

[135] Jess Weatherbed. *ArtStation is hiding images that protest against AI art.* The Verge. Dec. 2022. URL: `https://www.theverge.com/2022/12/23/23523864/artstation-removing-anti-ai-protest-artwork-censorship` (visited on Mar. 14, 2023).

[136] Elizabeth J. Miller et al. "AI hyperrealism: Why AI Faces Are Perceived as More Real than Human Ones". In: *Psychological Science* 34.12 (2023), pp. 1390–1403. (Visited on Nov. 24, 2023).

[137] In a portrait the horizon does not line up on the either side of the persons face.

[138] Kyle McDonald. *How to recognize fake AI-generated images.* Medium. Dec. 2018. URL: `https://kcimc.medium.com/how-to-recognize-fake-ai-generated-images-4d1f6f9a2842` (visited on Jan. 16, 2024).

[139] Dylan Beattie. "The Art of Code - Dylan Beattie". In: NDC. Feb. 2020. URL: `https://www.youtube.com/watch?v=6avJHaC3C2U` (visited on Jan. 16, 2024), 19:49-22:06.

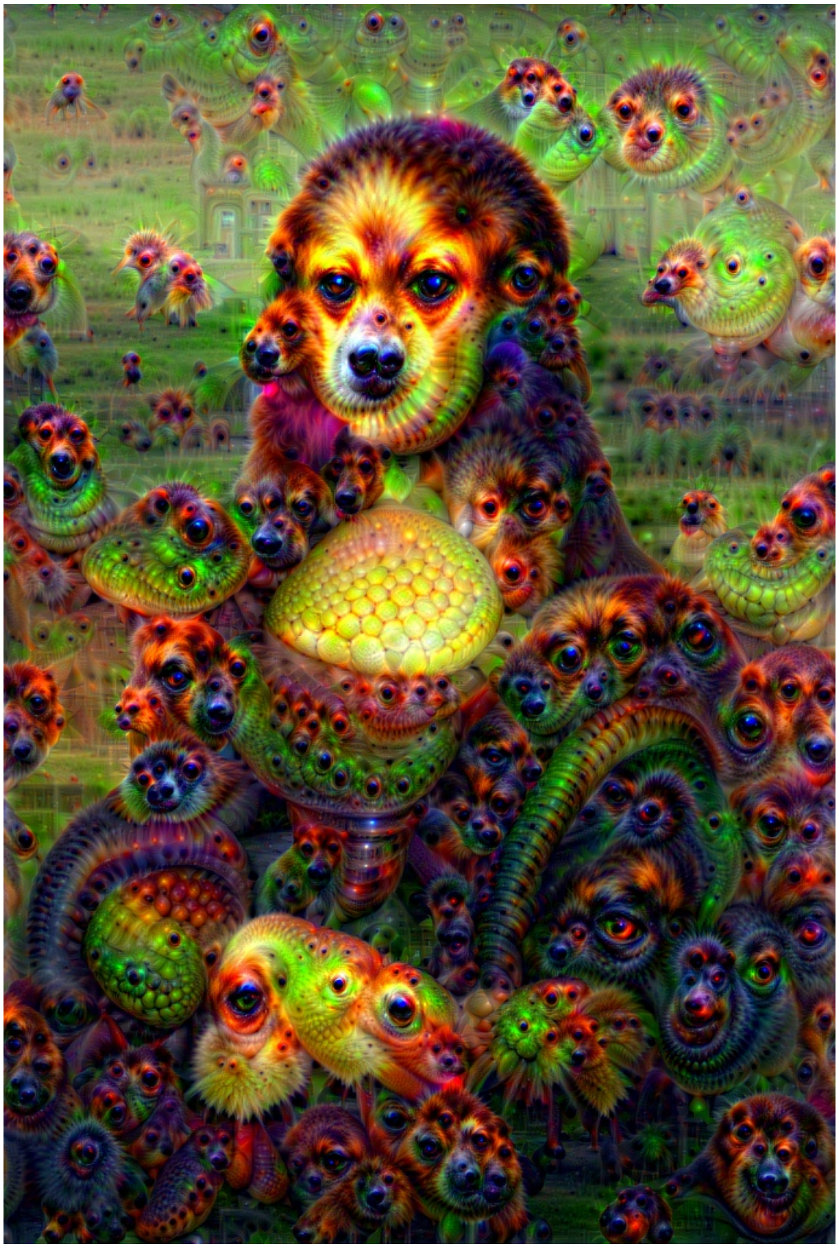

Figure 8: An example of Deep Dreaming. Pjfinlay and Aleksa Gordic. *"Mona Lisa" with DeepDream effect using VGG16 network trained on ImageNet created by P.J. Finlay using code written by Aleksa Gordic.* Wikipedia. Jan. 2021. URL: `https://w.wiki/8wTH` (visited on Jan. 13, 2024)

Hallucinations are a less compelling but equally interesting facet of AIs. Hallucination is the creation of false information that a LLM's 'thinks' is true, like a search engine, it will often show you what you asked for, without checking its validity or authenticity.[140] But the way it can persuade people of false information as part of its unintended design has a surprisingly sophisticated appearance, even if its process is simple. This is one of the main roadblocks that most current LLMs are facing; how to tie down AI to a certain 'train of thought'.[141] This would indicate that it is going to limit the AI's expressive ability in the future, limiting it to imitation and replication and not creating authentic works.

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[140] Devansh, *Why ChatGPT lies.*

[141] Michael Fauscette. *Grounding Large Language Models.* Nov. 2023. URL: `https://www.arionresearch.com/blog/grounding-large-language-models` (visited on Jan. 10, 2024).

6 Conclusion

Fundamentally AI works differently to us. AI is currently taught high level information to extrapolate to other problems, but the human starts with the rules and then is taught high level information. Big data is not the model to learn about the fundamental rules and we may have to find a different model to teach us the fundamental rules of a learning, intelligent machine. Theories have been made since the time of Turing,[142] but none have been able to prove themselves to the degree that big data and LLM's have so far. It is through art and the poetry of language that AI will understand the world. This leaves us with the philosophical question of how to best represent and encode reality.

Authenticity is magic, it is in the eye of the beholder.[143] The ethical creation of authentic AIVG is not possible but that does not seem to matter. The use and creation of these tools are not going to be stopped by ethical boundaries. The message of AI is one of mass production and generates questions about the work and authorship, hence, maybe we won't think of the creator in the same way as we do today. The creator may be a redundant concept, a free marketplace of ideas, where the ideas and the ideas alone are judged for what they are. This essay outlines the fear that the mass production of AI will in some way freeze culture. Whatever our current social-political landscape is now, will be extended and imitated and any existing discrimination or fashion styles will be produced with such velocity that the available dataset will become saturated with AI generated content. This moves the average closer and closer to the current norm as new subcultures become irrelevant in the vast quantities of AI work. Through AI we will find out what people actually want to make and consume.[144]

> *The more everyone does one thing the more valuable it becomes to do anything else.*[145]

However, if the viewer has no knowledge of its production, then the authenticity is conjured by the viewer. Therefore the viewer can have an authentic experience with the work. This placebo effect is crucial to understand how authenticity works. Hence, people are unaware of the real capabilities of AI, so the seed of true authenticity has been planted and it may begin to grow. If it continues to grow we may end up in the situation that Mcormack et al. discuss:

> *Albert was honoured as the first Indigenous Australian to be granted citizenship of Australia in 1957 [...] his artistic authorship [...] propelled him from non-entity into person-hood*[146]

The legal and social obligation to label AI may cause a kind of discrimination that many a sci-fi novel has alluded to. This is iterated by YouTube's recent plan to add new labels to indicate whether content was 'altered or synthetic'. Hence, people may never learn to truly accept a machine.

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[142] Frederick Hayes-Roth, Donald A Waterman, and Douglas Lenat. *Building Expert Systems Volume 1.* Addison-Wesley Publishing Company, Inc, 1983. (Visited on Jan. 16, 2024), p. 7.

[143] Bender et al., *On the Dangers of Stochastic parrots: Can Language Models Be Too big?*, p. 616.

[144] Lindsay Ellis. *The Last of the Game of Thrones Hot Takes.* YouTube. Aug. 2019. URL: `https://www.youtube.com/watch?v=BGr0NRx3TKU` (visited on Jan. 16, 2024), 0:00-1:18.

[145] Innuendo Studios, *Things of Beauty: Super Smash Bros. as Spectator Sport*, 10:25-10:30.

[146] McCormack, Gifford, and Hutchings, *Autonomy, Authenticity, Authorship and Intention in Computer Generated Art*, p. 41.

When everyone is super, no one will be[147]

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[147] Brad Bird et al. *The Incredibles*. 2004. (Visited on Dec. 2, 2004).

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